Is your water system ready for a wildfire?

Effects of Fire on Raw Water Quality

When a wildfire burns vegetation that secures the soil, runoff rates may increase, potentially bringing a surge in sediments and debris to streams and reservoirs that can result in numerous water quality concerns:

- Low dissolved oxygen (DO)
- Fish kills and other ecological changes
- Increased turbidity, suspended solids, and conductivity
- Increased total organic carbon (TOC)
- Increased ammonia from fire retardants
- Clogged intakes and increased sludge handling
- Elevated phosphorus, iron, manganese, and nitrate levels
- Unpleasant taste and odor
- Changes in pH and alkalinity

What can you do at your water system?

Before the Fire

- Restrict access to areas surrounding drinking water facilities
- Remove debris, trees, or other fire-hazard materials (create a defensible zone)
- Keep intakes clear of sticks, logs, and other debris
- Keep necessary chemicals on hand, and be prepared to tweak the dosage within accepted operating parameters.
- If in doubt, check with your drinking water regulatory agency.
- Build detention ponds to mitigate some of these issues by allowing solids to settle before entering the plant.
- Install fire resilient building materials
- Identify possible alternate water supplies, or maximize finished water storage prior to an anticipated poor water quality event.
- Create a Wildfire Management Plan
- Plan for increased maintenance and operator workload.
- Make sure all staff understand where to find information and help during a wildfire emergency.
- Conduct drills for your staff
- Review and update the plan as operations at your utility change

During and After the Fire

- Have first-response fire suppression equipment available
- Communicate with fire response teams
- Install equipment in the watershed to prevent damage from debris (sediment traps/debris booms)
- Monitor filters and increase backwashing, as necessary.
- Monitor raw water frequently, and perform jar testing to predict treatment needs.
- Prioritize staff safety and leave the firefighting to the professionals!

Monitor Conditions @ Alaska Interagency Coordination Center (AICC)
http://fire.ak.blm.gov/

Alaska Department of Environmental Conservation
Drinking Water Program
555 Cordova St. • 1-866-956-7656
http://www.dec.state.ak.us/eh/dw/index.htm

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CREATE A FIRE MANAGEMENT PLAN FOR YOUR WATER SYSTEM

Use the steps outlined below to identify and prioritize hazards, develop and implement an action plan to mitigate fire hazards, and create an annual maintenance schedule to ensure your water system and watershed drainage is as fire safe as you can make it.

1. Talk to your local fire officials and forestry/land management agencies. Ask them for suggestions about state and local fire codes and work to develop partnerships with them.

- Team up to identify hazards at your site.
- Discuss the ways you can help them protect your utility, such as creating fire breaks and maintaining fire roads.
- Pool your resources by setting up or joining a community wildfire protection planning group.
- Engage in exercises simulating fires that impact watersheds and facilities.

2. Create a defensible zone. Consider the effects natural and man-made features have on the spread of fire.

- Ridges can retard the speed at which a fire advances. Canyons and steep slopes can easily double the rate of spread.
- Fire breaks and fire roads create a buffer zone and provide a vantage point for fighting fires.

3. Identify Vulnerabilities. Think about facility components that can be damaged by wildfire.

- Protect your power. Remote control of system components, such as tanks, may be disabled if fire takes out power to those components.
- Protect your pump and well houses, wellheads, chemicals, and chlorinators.
- Help firefighters protect your assets by using GIS to map remote components. Keep a copy of the map in a secure offsite location.
- Understand the effects fire can have on raw water quality and the water treatment processes.

4. Remove Fuels. Fuels can consist of vegetation, chemicals, and many other materials such as oily rags, trash, cardboard boxes, and wooden pallets.

- Remove tree branches within six feet of the ground.
- Store fuels a safe distance from structures.
- Ask the local power utility to trim tree branches near power lines.
- Thin out continuous tree and brush cover around structures. All flammable vegetation should be removed within 15 feet of a structure.

5. Reduce Structure Ignitability. Fires can take hold quickly. Making structures less ignitable is an important part of a fire management plan.

- Trim tree branches overhanging a roof.
- Keep gutters clear of leaves and debris. Inspect at least twice yearly.
- For new construction, repairs, or remodels, use fire-resistant roofing and building materials.

6. Create a Maintenance Plan

- Identify and schedule seasonal tasks.
- Review and update the plan as operations at your utility change.

7. Conduct Drills for your Staff

- Test your contact lists every six months to ensure accuracy of information.
- Make sure all staff understand where to find information and help during a wildfire emergency.

Helpful Websites

Alaska Wild land Fire Coordinating Group (AWFCG) Brochures and Educational Materials

http://fire.ak.blm.gov/administration/awfcg.php

AK Division of Forestry (Incl. Burn Permit Info)

http://forestry.alaska.gov

BLM Alaska Fire Service
http://fire.ak.blm.gov/afs/

National Parks Service
http://www.nps.gov/akso/nature/fire/index.cfm

U.S. Fish and Wildlife
http://alaska.fws.gov/nwr/visitor/fire/index.htm

USDA Forest Service
http://www.fs.fed.us/fire/

Firewise
http://firewise.org/?&sso=0

Department of Transportation (Road Closures)
http://511.alaska.gov/

National Weather Service
http://www.weather.gov/

Alaska Division of Homeland Security and Emergency Management
http://ready.alaska.gov/

PWS Emergency Preparedness Coordinator
907.269.8924 or DECPWSSecurity@alaska.gov